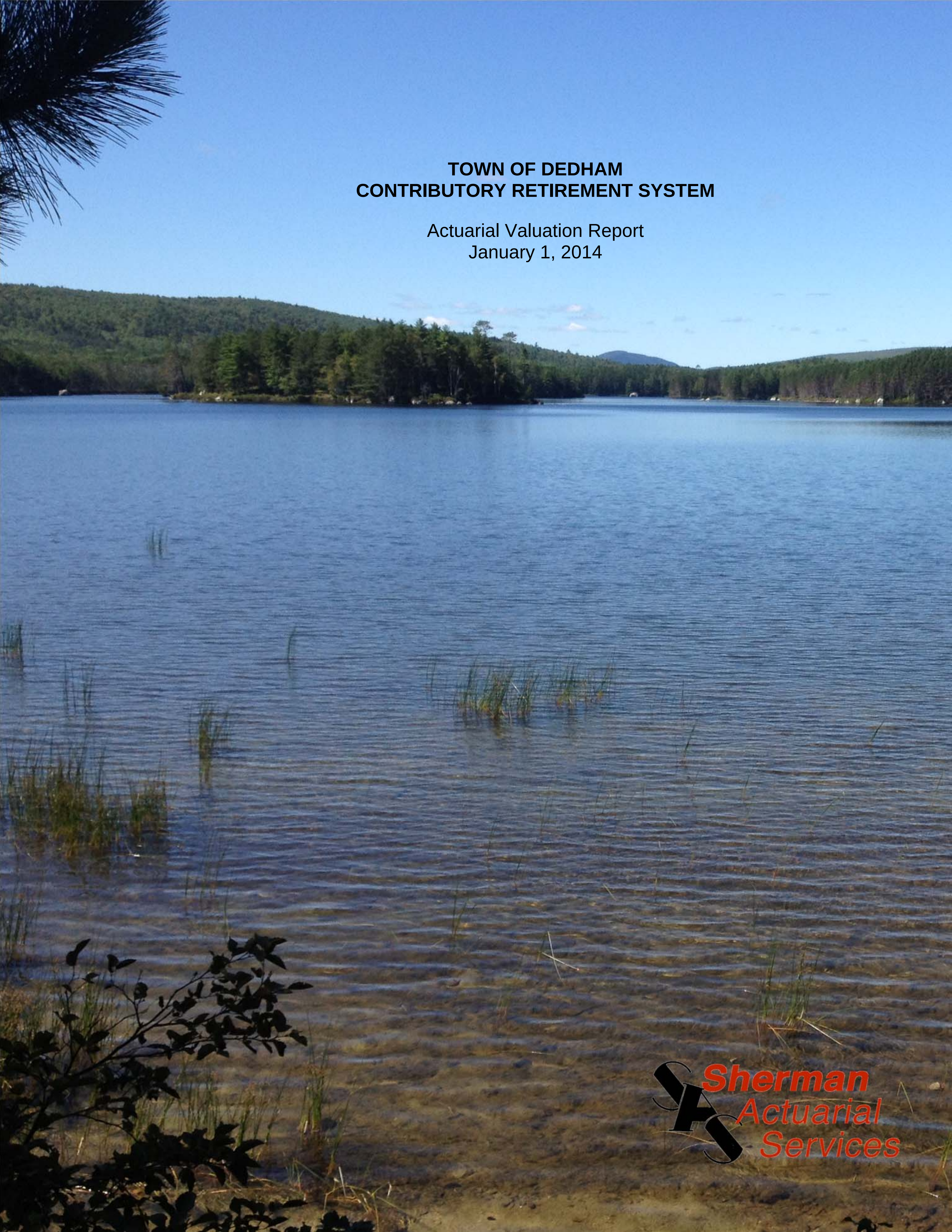
TOWN OF DEDHAM
CONTRIBUTORY RETIREMENT SYSTEM

Actuarial Valuation Report
January 1, 2014



Sherman Actuarial Services

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Report Summary:

Highlights	January 1, 2012	January 1, 2014
Contributions		
Funding Schedule FY 2015	$4,277,701	$4,277,701
Funding Schedule FY 2016	4,463,319	4,531,244
Funded Ratios		
GAS No. 25	71.9%	80.2%
Participants		
Actives	452	424
Retirees and Beneficiaries	255	266
Inactives	106	119
Disabled	42	54
Total	855	863
Payroll		
Payroll of Active Members	$20,742,966	$20,523,383
Average Payroll	45,892	48,404
Normal Cost		
Employer	1,293,311	1,077,411
Employee	1,795,173	1,773,213
Administrative Expenses	200,000	200,000
Total	3,288,484	3,050,624
Actuarial Accrued Liabilities		
Actives	57,293,530	54,139,579
Retirees, Beneficiaries, Disabilities and Inactives	62,932,509	70,792,161
Total	120,226,039	124,931,740
Actuarial Value of Assets	86,438,199	100,195,465
Unfunded Actuarial Accrued Liabilities	$33,787,840	$24,736,275

Introduction

This report presents the findings of an actuarial valuation as of January 1, 2014, of Dedham Contributory Retirement System.

The actuarial valuation is based on:

- Provisions Chapter 32 of the Massachusetts General Laws, "M.G.L", as of January 1, 2014.
- Employee data provided by the Retirement Board
- Asset information reported to the Public Employee Retirement Administration Commission by the Town of Dedham Contributory Retirement System
- Actuarial assumptions approved by the Retirement Board

The valuation and appropriation forecast are prepared in accordance with Chapter 32 of the M.G.L. as of January 1, 2014.

The valuation and forecast do not account for:

- Any subsequent changes in the law
- Chapter 32 of the M.G.L., Section 3(8)(c) transfers between systems
- State-mandated benefits
- Cost-of-living increases granted to retired members between 1982 and 1997. The cost of these benefits has been assumed by the State under Proposition Two and One-Half.

Actuarial Experience

In performing the actuarial valuation, various assumptions are made regarding such factors as mortality, retirement, disability, and withdrawal rates as well as both payroll, salary increases, and investment returns. A comparison of the current valuation and the prior valuation is made to determine how closely actual experience corresponded to anticipated occurrences. This analysis of the system provides insight into the overall quality of the actuarial assumptions and helps explain any change in the annual appropriation.

During the last year, the total unfunded actuarial accrued liability decreased by 26.8% to $24,736,275. The decrease is the result of net favorable actuarial experience during the preceding years and a change in actuarial assumptions. The sources of actuarial (gains) and losses are as follows:

Assets	(5,037,908)
Salary Increases	(3,496,798)
New Participants	1,276,553
Active - Retirements	(740,499)
Active - Terminations	368,692
Active - Mortality	686,584
Active - Disabilities	281,977
Inactive - Mortality and data adjustments	2,471,098
Other, includes data adjustments, buybacks, interest on ASF	(166,431)
Total Actuarial (Gain) / Loss	(4,356,732)
Change in Actuarial Assumptions	(5,500,588)

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Actuarial Costs and Liabilities:

Normal Costs

The normal cost is the sum of the individual normal costs determined for each member as if the assumptions underlying the cost determinations had been exactly realized. An individual normal cost represents that part of the cost of a member's future benefits which are assigned to the current year as if the costs are to remain level as a percentage of the member's pay. Benefits payable under all circumstances (i.e., retirement, death, disability, and terminations) are included in this calculation. Anticipated employee contributions to be made during the year are subtracted from the total normal cost to determine employer normal cost. The total normal cost is divided by total payroll to determine the normal cost as a percent of pay. The normal cost is shown in Table I.

Table I

	January 1, 2012	January 1, 2014
Superannuation	$2,097,037	$1,872,187
Termination	227,412	224,651
Death	193,034	188,819
Disability	571,001	564,967
Administrative Expenses	200,000	200,000
Total Normal Cost	3,288,484	3,050,624
% of Pay	15.9%	14.9%
Employee Contributions	1,795,173	1,773,213
% of Pay	8.7%	8.6%
Employer Normal Cost	$1,493,311	$1,277,411
% of Pay	7.2%	6.2%

Present Value of Actuarial Accrued Liabilities

The actuarial accrued liabilities (AAL) represents today's value of all benefits based on the past service of the actives and inactives. The AAL can be compared to the assets to determine the funded status of the Plan. The value of these earned benefits is shown in Table II below.

Table II

	January 1, 2012	January 1, 2014
Actives		
Superannuations	$52,500,627	$48,897,382
Termination	992,358	848,029
Death	1,121,897	1,636,226
Disability	2,678,648	2,757,942
Retirees and Inactives		
Retirees and Beneficiaries	62,388,398	54,454,651
Terminated (Refund)	544,111	604,232
Disabled	n/a	15,733,278
Total	$120,226,039	$124,931,740

Present Value of Future Benefits

The present value of future benefits represents today's value of all benefits earned by the inactive participants as well as all benefits earned and expected to be earned in the coming years by the active participants. The difference between the present value of future benefits and the present value of actuarial accrued liabilities is the value of benefits to be earned in the coming years. The value of the total expected benefits is shown in Table III.

Table III

	January 1, 2012	January 1, 2014
Actives		
Superannuation	n/a	$63,967,128
Termination	n/a	1,751,035
Death	n/a	3,138,846
Disability	n/a	7,867,446
Retirees and Inactives		
Retirees and Beneficiaries	n/a	54,454,651
Terminated (Refund)	n/a	604,232
Disabled	n/a	15,733,278
Total	n/a	$147,516,616

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Funded Status and Appropriations:

Market Value of Plan Assets

The trust fund composition on a market value basis is shown in Table IV.

Table IV

	January 1, 2012	January 1, 2014
Cash equivalents	$277,091	$313,760
Short term investments	0	0
Fixed income securities	0	0
Equities	84,237,910	105,057,671
International	0	0
Real Estate	0	0
Venture Capital	0	0
Other	0	0
Accounts receivable	82,822	6,009
Accounts payable	0	0
Accrued income	0	0
Total Market Value	$84,597,823	$105,377,440
Total Actuarial Value	$86,438,199	$100,195,465

Actuarial Value of Assets

The actuarial value of assets is determined by projecting the market value of assets as of the beginning of the prior plan year with the assumed rate of return during that year (8.0%) and accounting for deposits and disbursements with interest at the assumed rate of return. An adjustment is then applied to recognize the difference between the actual investment return and expected return over a four year period. This preliminary actuarial value is not allowed to differ from the market value of assets by more than 10%. The calculation of the actuarial value of assets as of January 1, 2014 is presented in Table V.

Table V

		January 1, 2014
(1)	Market value at January 1, 2013	$93,575,452
(2)	2013 Contributions	$6,519,181
(3)	2013 Payments	($8,433,549)
(4)	Net interest adjustment at 8.0% on (1), (2), and (3) to December 31, 2013	$7,409,461
(5)	Expected market value on January 1, 2014 (1) + (2) + (3) + (4)	$99,070,545
(6)	Actual market value on January 1, 2014	$105,377,440
(7)	2013 (Gain) / Loss	($6,306,895)
(8)	75% of 2013 (Gain) / Loss	($4,730,171)
(9)	2012 (Gain) / Loss	($4,506,699)
(10)	50% of 2012 (Gain) / Loss	($2,253,350)
(11)	2011 (Gain) / Loss	$7,206,182
(12)	25% of 2011 (Gain) / Loss	$1,801,545
(13)	Actuarial value on January 1, 2014, (6) + (8) + (10) + (12) but not less than 90% nor greater than 110% of (6)	$100,195,465
(14)	Ratio of actuarial value to market value	95.08%
(15)	Actuarial Value Return for 2012	10.02%
(16)	Actuarial Value Return for 2013	10.16%
(17)	Market Value Return for 2012	13.40%
(18)	Market Value Return for 2013	14.81%

Unfunded Actuarial Accrued Liabilities

Under the Entry Age Normal Actuarial Cost Method, the Actuarial Accrued Liability represents what the accumulated assets would have been as of the valuation date if:

- current plan provisions and assumptions had always been in effect,
- experience conformed exactly to assumptions, and
- the normal cost had been contributed each year since inception.

The actuarial value of the Fund's assets as of the end of the prior year are subtracted from the Actuarial Accrued Liability (AAL) to determine the Unfunded Actuarial Accrued Liability (UAAL) as of the valuation date. Over time, annual pension contributions will accumulate Plan assets equal to the AAL, and the UAAL will be eliminated. Thereafter, annual contributions equal to the normal cost will keep the Plan's assets and liabilities in balance. The UAAL is developed in Table VI.

Table VI

	January 1, 2012	January 1, 2014
Actuarial Accrued Liability	$120,226,039	$124,931,740
Actuarial Assets	86,438,199	100,195,465
Unfunded Actuarial Accrued Liability	$33,787,840	$24,736,275
Funded Status	71.9%	80.2%

Appropriations

The pension appropriation for the upcoming fiscal years have been calculated in accordance with the requirements set forth in Section 22D of Chapter 32 of the Massachusetts General Laws, and Chapter 188 of the Acts of 2010, An Act Relative to Municipal Relief. These amounts were calculated to comply with the June 30, 2040, full funding mandate for all accrued liabilities. The pension appropriation is the sum of the:

- Employer normal cost,
- Increasing amortization of the unfunded actuarial accrued liability by June 30, 2024
  $ 24,681,943 over 10 years with 4.0% increasing payments
- Increasing amortization of the 2002 Early Retirement Incentive unfunded liability by June 30, 2019
  $ 54,333 over 5 years
- Interest adjustment for payments made in July

The pension appropriation is shown in Table VII.

Table VII

	January 1, 2012	January 1, 2014
Normal cost	$1,533,695	$1,277,411
Amortization payment of unfunded accrued liability	1,932,937	2,907,955
Amortization payment of 2002 ERI liability	12,600	12,600
Total cost	$3,479,232	$4,197,966
% of Pay	16.8%	20.5%
Fiscal 2015 cost	$4,277,701	$4,277,701
Fiscal 2016 cost	$4,463,319	$4,531,244

Appropriation Forecast

The following exhibit forecasts employer and employee contributions over the next 32 years under the adopted funding schedule.

Note that the forecast is based upon an "open group" method. This method assumes that sufficient employees will be hired each year to keep the number constant. The total payroll of the system is expected to increase 4.0% per year. The employee contribution rate is expected to increase to 10.5% by 2039 as members contributing base percentages 5%, 7%, and 8% are replaced by new members, whose base contribution is 9%. Payments are assumed to be made at the beginning of the year.

The employer total cost is expected to increase during the next 10 years until the unfunded liabilities are completely paid off, at which time only the normal cost will remain. The total cost represents about 21%% of payroll, decreasing to about 5.7% by the time the unfunded liabilities are fully paid off, leaving only a long term normal cost of 4.5% thereafter. The decrease in the cost as a percentage of payroll is a result of the increase in member deductions.

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Appropriation Forecast

Fiscal Year Ending	Payroll*	Employee Contribution	Employer Normal Cost with Interest	Amortization Payments with Interest	Employer Total Cost with Interest	Employer Total Cost % of Payroll	Funded Ratio %**
2015	$20,523,383	$1,773,213	$1,327,524	$2,950,177	$4,277,701	20.8	80.1
2016	$21,344,318	$1,860,684	$1,363,434	$3,167,810	$4,531,244	21.2	81.6
2017	$22,198,091	$1,952,315	$1,400,093	$3,293,999	$4,694,092	21.1	83.2
2018	$23,086,015	$2,048,299	$1,437,503	$3,425,235	$4,862,738	21.1	84.9
2019	$24,009,455	$2,148,839	$1,475,665	$3,561,721	$5,037,386	21.0	86.7
2020	$24,969,833	$2,254,145	$1,514,581	$3,690,571	$5,205,152	20.8	88.6
2021	$25,968,627	$2,364,437	$1,554,248	$3,838,194	$5,392,442	20.8	90.6
2022	$27,007,372	$2,479,945	$1,594,666	$3,991,722	$5,586,388	20.7	92.8
2023	$28,087,667	$2,600,911	$1,635,830	$4,151,391	$5,787,221	20.6	95.0
2024	$29,211,173	$2,727,587	$1,677,736	$4,317,447	$5,995,183	20.5	97.5
2025	$30,379,620	$2,860,235	$1,720,377	$0	$1,720,377	5.7	100.0
2026	$31,594,805	$2,999,131	$1,763,745	$0	$1,763,745	5.6	100.0
2027	$32,858,597	$3,144,562	$1,807,830	$0	$1,807,830	5.5	100.0
2028	$34,172,941	$3,296,829	$1,852,620	$0	$1,852,620	5.4	100.0
2029	$35,539,859	$3,456,246	$1,898,100	$0	$1,898,100	5.3	100.0
2030	$36,961,453	$3,623,142	$1,944,255	$0	$1,944,255	5.3	100.0
2031	$38,439,911	$3,797,859	$1,991,065	$0	$1,991,065	5.2	100.0
2032	$39,977,508	$3,980,756	$2,038,509	$0	$2,038,509	5.1	100.0
2033	$41,576,608	$4,172,209	$2,086,562	$0	$2,086,562	5.0	100.0
2034	$43,239,673	$4,372,609	$2,135,199	$0	$2,135,199	4.9	100.0
2035	$44,969,259	$4,582,365	$2,184,388	$0	$2,184,388	4.9	100.0
2036	$46,768,030	$4,801,905	$2,234,095	$0	$2,234,095	4.8	100.0
2037	$48,638,751	$5,031,677	$2,284,285	$0	$2,284,285	4.7	100.0
2038	$50,584,301	$5,272,148	$2,334,914	$0	$2,334,914	4.6	100.0
2039	$52,607,673	$5,523,806	$2,385,940	$0	$2,385,940	4.5	100.0
2040	$54,711,980	$5,744,758	$2,481,377	$0	$2,481,377	4.5	100.0
2041	$56,900,459	$5,974,548	$2,580,632	$0	$2,580,632	4.5	100.0
2042	$59,176,478	$6,213,530	$2,683,858	$0	$2,683,858	4.5	100.0
2043	$61,543,537	$6,462,071	$2,791,212	$0	$2,791,212	4.5	100.0
2044	$64,005,278	$6,720,554	$2,902,860	$0	$2,902,860	4.5	100.0
2045	$66,565,489	$6,989,376	$3,018,975	$0	$3,018,975	4.5	100.0
2046	$69,228,109	$7,268,951	$3,139,734	$0	$3,139,734	4.5	100.0

* Calendar basis

** Beginning of Fiscal Year

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GASB Statements No. 25 and No. 27

Effective for periods beginning after June 15, 1997, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 25 and 27. These statements, which replace GASB Statement No. 5, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

Footnote disclosures required by GASB Statement No. 25 and 27 include a description of the plan, a summary of significant accounting policies, and information about contributions, legally required reserves, and investment concentrations. As a result of the oversight of the Public Employees Retirement Administration Commission (PERAC) and the conversion of unpaid contributions to pension related debt, the Net Pension Obligation (NPO) as required by Statement No. 27 will effectively always be equal to $0. The required disclosure information is shown in Table VIII.

Table VIII

		January 1, 2012	January 1, 2014
(1)	Actuarial Accrued Liability	$120,226,039	$124,931,740
(2)	Actuarial Value of Assets	86,438,199	100,195,465
(3)	Unfunded Actuarial Accrued Liability	33,787,840	24,736,275
(4)	Funded Ratio (2)/(1)	71.9%	80.2%
(5)	Covered Payroll	$20,742,966	$20,523,383
(6)	UAAL as a percentage of payroll: (3)/(5)	162.9%	120.5%
(7)	Annual Required Contribution (ARC)	$4,118,400	$4,277,701
(8)	Net Pension Obligation	$0	$0

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PERAC Annual Statement
APPENDIX PAGE 3
ACTUARIAL VALUATION AND ASSUMPTIONS

The most recent actuarial valuation of the System was prepared by Sherman Actuarial Services as of January 1, 2014.

The normal cost for employees on that date was:	$1,773,213	8.6% of pay
The normal cost for the employer was:	1,277,411	6.2% of pay

The actuarial liability for active members was:	$54,139,579
The actuarial liability for retired and inactive members was:	70,792,161
Total actuarial accrued liability:	124,931,740
System assets as of that date:	100,195,465
Unfunded actuarial accrued liability:	$24,736,275

The ratio of system's assets to total actuarial liability was 80.2%

The principal actuarial assumptions used in the valuation are as follows:

Investment Return:	8.00%
Rate of Salary Increase:	4.0%

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a percent of Covered Payroll (b-a)/c
01/01/14	$100,195,465	$124,931,740	$24,736,275	80.2%	$20,523,383	120.5%
01/01/12	86,438,199	120,226,039	33,787,840	71.9%	20,742,966	162.9%
01/01/10	85,456,310	107,609,083	22,152,773	79.4%	19,109,370	115.9%
01/01/08	90,708,716	98,591,648	7,882,932	92.0%	18,680,825	42.2%
01/01/06	70,287,535	89,323,471	19,035,936	78.7%	17,182,174	110.8%
01/01/04	61,223,000	81,608,000	20,385,000	75.0%	14,859,000	137.0%
01/01/03	54,144,000	77,109,000	22,964,000	70.0%	14,696,000	156.0%
01/01/01	57,355,000	67,959,000	10,603,000	84.0%	13,273,000	80.0%

GASB Statements No. 67 and No. 68

Effective for periods beginning after June 15, 2013, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 25 and 27. These statements, which amend GASB Statements No. 25 and No. 27, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

The statement requires the system to present two financial statements – a statement of fiduciary net position and a statement of changes in fiduciary net position. The statement of fiduciary net position presents the following items as of the end of the plan's reporting period, as applicable:

- Assets
- Deferred outflows of resources (consumption of net assets by the employers that is applicable to a future reporting period)
- Liabilities
- Deferred inflows of resources (acquisition of net assets by the employers that is applicable to a future reporting period)
- Fiduciary net position (Assets + Deferred outflows – Liabilities – Deferred inflows)

The system is considered a cost-sharing multiple-employer pension plan since pension obligations exist for employees of more than one employer and plan assets can be used to pay the benefits of the employees of any employer.

This report does not include all items required under GASB Statements No. 67 and No. 68. Rather, it provides all items required that are not readily available from other sources such as the Annual Statement of the Financial Condition prepared by the Board, Chapter 32 of the Massachusetts General Laws and investment reports prepared by the plan's investment consultant.

Discount Rate

The discount rate, and all other actuarial assumptions, are the as those described in Exhibit 6. The discount rate was selected based on a projection of employer and employee contributions, benefit payments, expenses and the long term expected rate of return on trust assets. Under Chapter 32 of the Massachusetts Laws, employers are required to make the necessary contributions to the trust such that the plan reaches a full funding status by 2040. In addition, Chapter 32 also gives the Retirement Board the right to go directly to the Assessors of the community and add an additional property tax to bills for amounts not paid by employer.

Based on these laws and assumptions, the pensions plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

The Board selected 8.00% as the long term expectation of investment returns. The average return for the 29 years ending as of December 31, 2013 was 9.82%. The average return for the past 5 years ending December 31, 2013 was 12.06%.

Assets

The Net Position Restricted for Pensions, shown in page 7, is $105,377,440. The 2013 Annual Statement of the Financial Condition contains the values for previous years and the changes in Net Position Restricted for Pensions. Investments are reported at fair value.

Net Pension Liability as of December 31, 2013 – GASB Statement No. 67

The following presents the net pension liability of the system calculated using the discount rate of 8.00%, as well as what the system's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (7.00%) or 1-percentage-point higher (9.00%) than the current rate:

	1% Decrease (7.00%)	**Current Discount Rate (8.00%)**	**1% Increase (9.00%)**
Total Pension Liability	$ 137,362,884	$ 124,931,740	$ 114,230,536
Plan Fiduciary Net Position	$ 105,377,440	$ 105,377,440	$ 105,377,440
Net Pension Liability	$ 31,985,444	$ 19,554,300	$ 8,853,096

The Plan Fiduciary Net Position as a percentage of the Total Pension Liability is 84.3%.

Net Pension Liability as of June 30, 2014 – GASB Statement No. 68

The following presents the net pension liability of the system calculated using the discount rate of 8.00%, as well as what the system's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (7.00%) or 1-percentage-point higher (9.00%) than the current rate:

	1% Decrease (7.00%)	**Current Discount Rate (8.00%)**	**1% Increase (9.00%)**
Total Pension Liability	$ 139,209,678	$ 126,611,402	$ 115,766,324
Plan Fiduciary Net Position*	$ 108,093,850	$ 108,093,850	$ 108,093,850
Net Pension Liability	$ 31,115,828	$ 18,517,552	$ 7,672,474

*Estimated

The Plan Fiduciary Net Position as a percentage of the Total Pension Liability is 85.4%.

Schedules of Required Supplementary Information

	2014
Total Pension Liability – Beginning	n/a
Total Pension Liability – Ending (a)	$ 124,931,740
Plan Fiduciary Net Position – Beginning	n/a
Plan Fiduciary Net Position – Ending (b)	$ 105,377,440
Net Pension Liability – Ending (a) – (b)	$ 19,554,300
Plan Fiduciary Net Positions as a percentage of the Total Pension Liability	84.3%
Covered-employee payroll	$ 20,523,383
Net Pension Liability as a percentage of Covered-employee Payroll	95.3%

EXHIBITS

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Age/Service Distribution with Salary as of January 1, 2014

Attained Age	Average Salary <5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
< 20	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
20-24	14	0	0	0	0	0	0	0	0	14
	25,669	0	0	0	0	0	0	0	0	25,669
25-29	40	5	0	0	0	0	0	0	0	45
	29,798	53,161	0	0	0	0	0	0	0	32,394
30-34	15	15	0	0	0	0	0	0	0	30
	39,628	54,704	0	0	0	0	0	0	0	47,166
35-39	9	12	10	3	0	0	0	0	0	34
	49,618	58,407	68,936	68,076	0	0	0	0	0	60,030
40-44	8	9	13	9	2	0	0	0	0	41
	44,182	37,105	63,333	68,615	66,541	0	0	0	0	55,155
45-49	13	14	6	14	6	3	0	0	0	56
	30,300	32,485	55,033	71,991	67,583	80,539	0	0	0	50,605
50-54	10	21	14	9	8	10	3	0	0	75
	49,543	34,004	38,724	56,111	68,218	71,143	75,365	0	0	49,865
55-59	5	8	12	9	8	11	8	1	0	62
	42,330	30,203	43,440	50,329	37,603	76,981	74,360	121,433	0	53,088
60-64	5	13	5	7	5	7	2	1	2	47
	33,093	36,379	48,494	46,667	57,866	49,519	62,211	95,247	86,935	47,596
65-69	1	0	1	1	5	3	1	1	0	13
	41,018	0	62,135	51,501	50,374	33,787	47,245	63,432	0	47,582
70+	0	1	2	1	1	0	1	1	0	7
	0	0	31,654	22,559	49,394	0	22,803	61,255	0	38,300
Total Employees	120	98	63	53	35	34	15	4	2	424
Average Salary	35,443	40,863	51,972	60,157	56,450	66,113	67,696	85,342	86,935	48,404

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Retiree Distribution as of January 1, 2014

	Number of Employees			Total Payments		
Attained Age	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	0	0	0	0	0	0
40-44	0	0	0	0	0	0
45-49	1	0	1	42,593	0	42,593
50-54	0	1	1	0	3,612	3,612
55-59	6	5	11	223,254	62,623	285,878
60-64	20	12	32	826,466	142,741	969,207
65-69	27	10	37	1,255,930	190,358	1,446,288
70-74	28	16	44	830,229	319,963	1,150,192
75-79	27	13	40	768,252	225,080	993,332
80-84	20	20	40	458,132	273,891	732,023
85-89	15	16	31	259,473	171,700	431,173
90-94	13	10	23	152,185	71,243	223,428
95+	6	0	6	30,879	0	30,879
Total	163	103	266	4,847,393	1,461,212	6,308,605
Average (Age/Payment)	76.03	77.03	76.42	29,739	14,187	23,717
Frequency Percent	61.3	38.7	100.0	76.8	23.2	100.0

Disabled Retiree Distribution as of January 1, 2014

	Number of Employees			Total Payments		
Attained Age	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	0	0	0	0	0	0
40-44	0	0	0	0	0	0
45-49	1	0	1	5,805	0	5,805
50-54	2	2	4	81,091	90,513	171,604
55-59	6	1	7	250,381	34,387	284,767
60-64	5	0	5	245,979	0	245,979
65-69	13	0	13	335,006	0	335,006
70-74	14	1	15	393,937	31,623	425,561
75-79	2	0	2	93,451	0	93,451
80-84	3	0	3	46,585	0	46,585
85-89	3	0	3	78,804	0	78,804
90-94	1	0	1	14,381	0	14,381
95-99	0	0	0	0	0	0
Total	50	4	54	1,545,420	156,523	1,701,943
Average (Age/Payment)	69.4	58.7	68.6	30,908	39,131	31,517
Frequency Percent	92.6	7.4	100.0	90.8	9.2	100.0

P:\Dedham 19757\Val14\[Dedham2014 4pct SS.xlsm]Cash Flow

EXHIBIT 4 - CASHFLOW FORECAST:

The following is a 30 year forecast of benefit payments net of state reimbursable COLA payments, Contribution Income and Investment Returns.

Plan Year Ending	Benefit Payments	Employee Contributions	Employer Contributions	Investment Returns	Net change in plan assets
2014	$9,347,195	$1,773,213	$4,277,701	$7,824,105	$4,527,824
2015	9,102,780	1,860,684	4,531,244	8,116,419	5,405,568
2016	9,458,461	1,952,315	4,694,092	8,539,664	5,727,609
2017	9,826,773	2,048,299	4,862,738	8,988,393	6,072,657
2018	10,176,478	2,148,839	5,037,386	9,465,684	6,475,430
2019	10,510,397	2,254,145	5,205,152	9,975,538	6,924,438
2020	10,898,886	2,364,437	5,392,442	10,519,934	7,377,927
2021	11,271,078	2,479,945	5,586,388	11,101,507	7,896,762
2022	11,623,227	2,600,911	5,787,221	11,725,644	8,490,548
2023	11,987,289	2,727,587	5,995,183	12,397,099	9,132,580
2024	12,287,612	2,860,235	1,720,377	12,945,877	5,238,877
2025	12,563,584	2,999,131	1,763,745	13,354,184	5,553,476
2026	12,849,877	3,144,562	1,807,830	13,787,294	5,889,809
2027	13,138,478	3,296,829	1,852,620	14,247,262	6,258,233
2028	13,433,560	3,456,246	1,898,100	14,736,496	6,657,282
2029	13,735,270	3,623,142	1,944,255	15,257,442	7,089,570
2030	14,043,756	3,797,859	1,991,065	15,812,759	7,557,928
2031	14,359,170	3,980,756	2,038,509	16,405,330	8,065,425
2032	14,681,668	4,172,209	2,086,562	17,038,285	8,615,388
2033	15,011,410	4,372,609	2,135,199	17,715,016	9,211,415
2034	15,348,557	4,582,365	2,184,388	18,439,210	9,857,406
2035	15,693,276	4,801,905	2,234,095	19,214,861	10,557,585
2036	16,045,738	5,031,677	2,284,285	20,046,302	11,316,527
2037	16,406,115	5,272,148	2,334,914	20,938,235	12,139,182
2038	16,774,587	5,523,806	2,385,940	21,895,753	13,030,912
2039	17,151,334	5,744,758	2,481,377	22,922,720	13,997,521
2040	17,536,543	5,974,548	2,580,632	24,026,654	15,045,292
2041	17,930,403	6,213,530	2,683,858	25,214,040	16,181,025
2042	18,333,109	6,462,071	2,791,212	26,491,906	17,412,080
2043	18,880,397	6,720,554	2,902,860	27,862,552	18,605,570

EXHIBIT 5 – SUMMARY OF PLAN PROVISIONS:

This summary is prepared in accordance with Chapter 32 as of January 1, 2014, and does not take into account any subsequent changes.

1. Administration

Each of the 107 contributory retirement systems for public employees of the Commonwealth of Massachusetts are guided by the applicable provisions of Chapter 32 of the Massachusetts General Laws and other applicable statutes. Although these boards operate semi-independently, there is a uniform set of rules governing benefits, eligibility, contributions, financing, and accounting.

2. Participation

Participation is mandatory for all full-time employees whose employment commences prior to age 65. Eligibility with respect to part-time, professional, temporary, or intermittent employment is governed by the local board. Membership is optional for certain elected officials, State officials appointed by the Governor, and certain hospital interns.

There are four classes of membership as follows:

(i) Group 1: Most general employees in State and local government

(ii) Group 2: Certain specified hazardous duty positions

(iii) Group 3: State police officers and inspectors

(iv) Group 4: Local police officers, firefighters, and designated employees of the municipal light department.

For members in more than one group, participation will be proportional.

Chapter 176 of the Acts of 2011 created different plan provisions within these groups for those hired on or after April 2, 2012.

3. Salary

Salary is defined as gross regular compensation. Salary does not include bonuses, overtime, severance pay, unused sick leave credit, or other similar compensation.

4. Member Contributions

Member contributions vary depending upon date hired as follows:

Date of Hire	Member Contribution Rate
Prior to 1975	5.0% of Salary
1975 to 1983	7.0% of Salary
1984 to 1996	8.0% of Salary
1996 and Later plus	9.0% of Salary
1979 and Later	2.0% of Salary in excess of $30,000

For Group 1 employees who become members on or after April 2, 2012, the Contribution Rate shall be 6% after the completion of 30 years of service.

5. Average Salary

Average salary is used to determine a participant's benefit. It is defined as the average salary during the three consecutive-year period that produces the highest average. (Alternatively, if a greater amount results, it is the average rate of salary earned during the period or periods, whether or not consecutive, that constitutes the last three years preceding retirement.). For employees who become members on or after April 2, 2012, the averaging period shall be five years.

6. Creditable Service

In general, creditable service is awarded during the period in which a member contributes to the retirement system.

7. **Service Retirement**

a. Eligibility:

For an employee to be eligible for service retirement (also referred to as superannuation), one of the following conditions must be met:

(i) completion of 20 years of service

(ii) for an employee hired prior to January 1, 1978, attainment of age 55 as an active member

(iii) for an employee hired on or after January 1, 1978, attainment of age 55 as an active member and completion of ten years of service

(iv) for a Group 1 employee hired on or after April 2, 2012, attainment of age 60 and completion of ten years of service

b. Benefit Amount:

The retirement allowance is determined as a product of the participant's Benefit Rate times Average Salary times Creditable Service, where Benefit Rate is determined from the following table for those hired prior to April 2, 2012:

Age at Retirement	Percentage of Average Salary Group 1	Group 2	Group 4
65 or Over	.025	.025	.025
64	.024	.025	.025
63	.023	.025	.025
62	.022	.025	.025
61	.021	.025	.025
60	.020	.025	.025
59	.019	.024	.025
58	.018	.023	.025
57	.017	.022	.025
56	.016	.021	.025
55	.015	.020	.025
54	.014	.014	.024
53	.013	.013	.023
52	.012	.012	.022
51	.011	.011	.021
50	.010	.010	.020
49	.009	.009	.019
48	.008	.008	.018
47	.007	.007	.017
46	.006	.006	.016
45	.005	.005	.015
44	.004	.004	.004
43	.003	.003	.003
42	.002	.002	.002
41	.001	.001	.001

For those hired after April 1, 2012 who retire with less than 30 years of service, the following rates are applied:

Age at Retirement	Percentage of Average Salary Group 1	Group 2	Group 4
67 or Over	.0250	.0250	.0250
66	.0235	.0250	.0250
65	.0220	.0250	.0250
64	.0205	.0250	.0250
63	.0190	.0250	.0250
62	.0175	.0250	.0250
61	.0160	.0235	.0250
60	.0145	.0220	.0250
59		.0205	.0250
58		.0190	.0250
57		.0175	.0250
56		.0160	.0235
55		.0145	.0220
54			.0205
53			.0190
52			.0175
51			.0160
50			.0145

For those hired after April 1, 2012 who retire with at least 30 years of service, the following rates are applied:

Age at Retirement	Percentage of Average Salary Group 1	Group 2	Group 4
67 or Over	.02500	.02500	.02500
66	.02375	.02500	.02500
65	.02250	.02500	.02500
64	.02125	.02500	.02500
63	.02000	.02500	.02500
62	.01875	.02500	.02500
61	.01750	.02375	.02500
60	.01625	.02250	.02500
59		.02125	.02500
58		.02000	.02500
57		.01875	.02500
56		.01750	.02375
55		.01625	.02250
54			.02125
53			.02000
52			.01875
51			.01750
50			.01625

8. Deferred Vested Retirement

a. Eligibility:

A participant who has completed ten or more years of creditable service is eligible for a deferred vested retirement benefit. If termination is involuntary, the participant is vested after six years.

b. Benefit Amount:

The participant's accrued benefit is payable commencing at age 55, or may be deferred until later at the employee's option.

c. Refund of Contributions:

In lieu of the deferred pension benefit, a member may elect to receive a refund of their accumulated contributions. Members with ten or more years of service are entitled to 100% of the credited interest on their contributions. Members with five to ten years of service are entitled to 50% of the credited interest on their contributions. No credited interest is provided for members with less than five years of service.

9. Accidental Disability

a. Eligibility:

Participants are eligible for an accidental disability benefit, regardless of service or age, if they become permanently and totally incapacitated for further duty as a result of personal injury sustained while in the performance of duties.

b. Benefit Amount:

The accidental disability amount is 72% of annual salary plus $450 per year for each child plus an additional annuity based upon accumulated Member Contributions with credited interest.

10. Ordinary Disability

a. Eligibility:

An ordinary disability occurs when a member becomes permanently and totally disabled due to sickness or injury that is not job related. In order to be eligible for an ordinary disability benefit, a member must have ten years of service (and be less than age 55 or age 60 if hired on or after April 2, 2012).

b. Benefit Amount:

The ordinary disability amount is equal to the accrued retirement benefit as if the member were age 55 (age 60 if hired on or after April 2, 2012). If the member was a veteran, the benefit is 50% of the member's final rate of Salary during the preceding 12 months, plus an annuity based upon accumulated Member Contributions plus credited interest. If the participant is over age 55 (age 60 if hired on or after April 2, 2012), he will receive not less than the superannuation allowance to which he is entitled.

11. <u>Survivor Benefits</u>

a. <u>Occupational Death</u>:

The survivors of a member who dies due to an occupational injury will be entitled to a lump sum return of contributions plus a pension benefit equal to 72% of the participant's annual Salary.

b. <u>Non-Occupational Death</u>:

Upon the death of a member other than due to an occupational injury, the designated beneficiary will be entitled to a retirement benefit as if Option C had been elected with a minimum of $250 per month to the surviving spouse, plus $120 for the first child, plus $90 for each additional child. If no beneficiary is designated and if the employee worked two years, and is married at least one year, the spouse may elect benefits. If there is no designated beneficiary or surviving spouse, then member contributions are returned. If there are dependent children but no surviving spouse, they may elect minimum survivor benefits of $250 per month plus $120 for the first child and $90 for each additional child.

c. <u>Refund of Contributions</u>:

Upon the death of a member not entitled to survivor benefits, the beneficiary is entitled to a refund of all member contributions with interest.

12. <u>Cost-of-Living Increases</u>

In accordance with the adoption of Chapter 17 of the Acts of 1997, the granting of a cost-of-living adjustment will be determined by an annual vote by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3.0%, beginning on July 1. All retirees, disabled retirees, and beneficiaries who have been receiving benefits payments for at least one year as of July 1 are eligible for the adjustment. The maximum amount of pension benefit subject to a COLA is $16,000. All COLAs granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the State and are not the liability of the Retirement System.

13. Postretirement Death Benefits

Any benefits following the death of a member after retirement are based upon the form of benefit the participant elected at the time of retirement. There are three available forms as follows:

(i) Option A – Life annuity

(ii) Option B – Life annuity with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member

(iii) Option C – Life annuity with 66-2/3% of benefit continued after death of member to designated joint annuitant

EXHIBIT 6 – ACTUARIAL METHODS AND ASSUMPTIONS:

The actuarial cost method, factors, and assumptions used in determining cost estimates are presented below.

1. Member Data

The member data used in the determination of cost estimates consist of pertinent information with respect to the active, inactive, retired, and disabled members of the employer as supplied by the employer to the actuary.

2. Valuation Date

January 1, 2014.

3. Actuarial Cost Method

The costs of the Plan have been determined in accordance with the individual entry age normal actuarial cost method.

4. Rate of Investment Return

It is assumed that the assets of the fund will accumulate at a compound annual rate of 8.0% per annum.

5. Salary Scale

It is assumed that salaries including longevity will increase at a rate of 4.0% per year.

6. Cost-of-Living Increases

Cost-of-living increases have been assumed to be 3.0% of the lesser of the pension amount and $12,000 per year.

7. Value of Investments

Assets held by the fund are valued at market value as reported by the Public Employees' Retirement Administration Commission (PERAC). The actuarial value of assets is determined using a five-year smoothing of asset returns greater than or less than the assumed rate of return.

8. Annual Rate of Withdrawal Prior to Retirement

Based on an analysis of experience, the assumed annual rates of withdrawal may best be illustrated by the following rates at the following ages:

Service	General Employees	Police and Fire Employees
0	0.1500	0.0150
10	0.0540	0.0150
20	0.0200	0.0000
30	0.0000	0.0000

9. Annual Rate of Mortality

It is assumed that both pre-retirement and post retirement mortality are represented by the RP-2000 Mortality Table for males and females, adjusted to 2015 with Scale AA. Mortality for disabled members is represented by the RP-2000 Mortality Table set forward two years for all disabled members.

10. Service Retirement

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages for those hired prior to April 2, 2012:

Age	Male General Employees	Female General Employees	Male and Female Police and Fire Employees
50	0.0100	0.0150	0.02000
51	0.0100	0.0150	0.02000
52	0.0100	0.0200	0.02000
53	0.0100	0.0250	0.05000
54	0.0200	0.0250	0.07500
55	0.0200	0.0550	0.15000
56	0.0250	0.0650	0.10000
57	0.0250	0.0650	0.10000
58	0.0500	0.0650	0.10000
59	0.0650	0.0650	0.15000
60	0.1200	0.0500	0.20000
61	0.2000	0.1300	0.20000
62	0.3000	0.1500	0.25000
63	0.2500	0.1250	0.25000
64	0.2200	0.1800	0.30000
65	0.4000	0.1500	1.00000
66	0.2500	0.2000	1.00000
67	0.2500	0.2000	1.00000
68	0.3000	0.2500	1.00000
69	0.3000	0.2000	1.00000
70	1.0000	1.0000	1.00000

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages for those hired on or after April 2, 2012:

Age	Male General Employees	Female General Employees	Male and Female Police and Fire Employees
50	0.0000	0.0000	0.0100
51	0.0000	0.0000	0.0100
52	0.0000	0.0000	0.0200
53	0.0000	0.0000	0.0200
54	0.0000	0.0000	0.0200
55	0.0000	0.0000	0.0500
56	0.0000	0.0000	0.0750
57	0.0000	0.0000	0.1500
58	0.0000	0.0000	0.1000
59	0.0000	0.0000	0.1000
60	0.0500	0.0650	0.1000
61	0.0650	0.0650	0.1500
62	0.2000	0.1500	0.2000
63	0.2000	0.1300	0.2000
64	0.3000	0.1500	0.3000
65	0.2500	0.1250	1.0000
66	0.2200	0.1800	1.0000
67	0.4000	0.2500	1.0000
68	0.3000	0.2000	1.0000
69	0.3000	0.2000	1.0000
70	1.0000	1.0000	1.0000

12. Annual Rate of Disability Prior to Retirement

Based on an analysis of experience, the assumed annual rates of disability may best be illustrated by the following probabilities at the following ages:

Attained Age	General Employees	Police and Fire Employees
20	0.0001	0.0010
30	0.0003	0.0030
40	0.0010	0.0030
50	0.0019	0.0125

In addition, it is assumed for the general employees that 50% of all disabilities are ordinary (50% are service connected). For police and fire employees, 10% of all disabilities are assumed to be ordinary (90% are service connected).

13. Family Composition

It is assumed that 80% of all members will be survived by a spouse and that females (males) are three years younger (older) than members.

14. Administrative Expenses

The normal cost is increased by an amount equal to the anticipated administrative expenses for the upcoming fiscal year. The amount for fiscal year 2014 is $200,000 and is anticipated to increase at 4.0% per year.

EXHIBIT 7 – GLOSSARY OF TERMS:

This glossary summarizes the technical terms contained in this report.

1. Actuarial Accrued Liability

That portion of the Actuarial Present Value of plan benefits that is not provided for by future employer Normal Costs or employee contributions.

2. Actuarial Assumptions

Assumptions as to the occurrence of future events affecting the Retirement System such as:

- Rates of investment returns
- Increases in a member's salary
- Inflation
- The probability of mortality, turnover, disablement
- Retirement at each age and other relevant items

3. Actuarial Cost Method

A procedure for allocating the Actuarial Present Value of pension plan benefits between Normal Cost and Actuarial Accrued Liability.

4. Actuarial Present Value

The single sum amount required at the valuation date that is required to provide for anticipated future events based upon the terms of the plan and the Actuarial Assumptions.

5. Forecast

A projection of future benefit payments or contribution requirements based upon the terms of the plan, the current asset amounts, the Actuarial Assumptions, and additional assumptions as to the replacement of terminating employees with new employees.

6. <u>Normal Cost</u>

That portion of the Actuarial Present Value of future benefits that is assigned to the current year.

7. <u>Unfunded Actuarial Accrued Liability</u>

That portion of the Actuarial Accrued Liability that is not provided for by current actuarial value of assets.

8. <u>Valuation Method</u>

The method used to divide the cost of future benefits among the Actuarial Accrued Liability, the current year's Normal Costs, and future years' Normal Costs. The resulting current funding requirement is then determined as the current year's Normal Cost plus the payment necessary to amortize the Unfunded Actuarial Liability.

9. <u>Vested Liability</u>

That portion of the Actuarial Present Value of Accrued Benefits that a member would be entitled to if the member terminated employment with the employer as of the valuation date.

CERTIFICATION:

This report fairly represents the actuarial position of the City of New Bedford Retirement System contributing as of January 1, 2014, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued liability and normal cost are reasonably related to plan experience and to reasonable expectations, and represents our best estimate of anticipated plan experience.

Sherman Actuarial Services, LLC

Daniel W. Sherman, ASA, MAAA
Enrolled Actuary No. 11-4086

September, 2014

BREAKOUTS

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Breakouts - Actuarial Based

	Total	All Others	Housing
(1) Participants			
(a) Actives	424	409	15
(b) Inactives	246	246	0
(c) Retirees	266	258	8
(d) Disabled Retirees	54	54	0
(e) Total	863	840	23
(2) Payroll of Active Participants	$ 20,523,383	$ 19,699,790	$ 823,593
(3) Normal Cost			
(a) Total Normal Cost	2,850,624	2,766,113	84,511
(b) Expected Employee Contributions	1,773,213	1,700,345	72,868
(c) Administrative Expenses	200,000	194,670	5,330
(d) Net Employer Normal Cost (a) - (b) + (c)	1,277,411	1,260,438	16,973
(4) Actuarial Accrued Liability	124,931,740	121,415,309	3,516,431
(5) Assets*	100,195,465	97,375,281	2,820,184
(6) Unfunded Actuarial Accrued Liability (4) - (5)	24,736,275	24,040,028	696,247
(7) Amortizations*	2,920,555	2,826,105	94,450
(8) Total Required Employer Contributions (3d) + (7)	4,197,966	4,086,543	111,423
(9) Fiscal 2015 Cost	$4,277,701	$4,164,161	$113,539
Percentage of Total Cost	100.00%	97.35%	2.65%
(10) Fiscal 2016 Cost	$4,531,244	$4,410,975	$120,269
Percentage of Total Cost	100.00%	97.35%	2.65%
(12) Fiscal 2017 Cost	$4,694,092	$ 4,569,501	$ 124,591
Percentage of Total Cost	100.0%	97.35%	2.65%

* Allocation is based on the ratio of the Unfunded Actuarial Accrued Liability